

TAXONOMIC NOTES ON POLYNESIAN MOLLUSCA WITH DESCRIPTIONS OF NEW SPECIES OF NASSARIIDAE

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Abstract. The type-specimen of *Cantharidus marmoreus* (Pease) is illustrated and the species is reported from Mururoa Atoll, Tuamotus. *Coralliophila porphyroleuca* (Crosse) has been re-discovered in Tahiti and Moorea I, and the radular anatomy of *Peristernia lirata* (Pease) confirms the placement in the genus *Peristernia*. *P. sowerbyi* (Melvill) described from the Galapagos Is actually lives in the Tuamotu Archipelago. The authorship of *Philbertia felina* and *Turridrupa jubata* must be credited to Reeve rather than Hinds, and a range-extension from New Caledonia to the Tuamotus is recorded for *T. jubata*. *Viriola samoana* Cernohorsky, is recorded for the first time from French Polynesia and *Vexillum (Pusia) mediomaculatum* (Sowerby), previously known only from the western Indian Ocean is recorded from the Tuamotus and the Hawaiian Is. The nassarid species *Nassarius troendleorum* and *N. rehderi* are described as new to science.

During a field trip to French Polynesia in August 1979, I had the opportunity to collect some interesting molluscan material and also examined collections from Mururoa Atoll, Anaa I and Tahiti. The results are new records for French Polynesia, descriptions of new species and re-discovery of species described in the last century.

Family TROCHIDAE

Subfamily MONODONTINAE Gray, 1856

The subfamily name Monodontinae is erroneously credited to Cossmann, 1916, in literature.

Genus *Cantharidus* Montfort, 1810

Cantharidus Montfort, 1810, Conchyl. syst. 2: 251. Type species by OD *C. iris* Montfort, 1810 = *Limax opalus* Martyn, 1784 (*nom. conserv.*) Recent, New Zealand.

Cantharidus marmoreus (Pease, 1868)

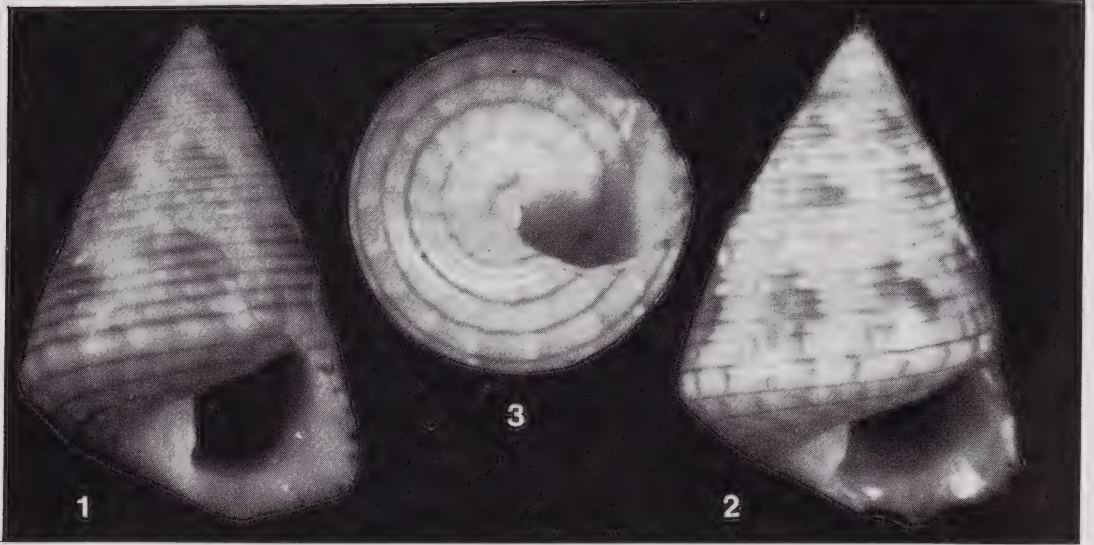
(Figs. 1-3)

1868. *Trochus marmoreus* Pease, Americ. J. Conch. 3 (4): 287, pl. 24, fig. 9.

1889. *Calliostoma marmoreum* Pease, Pilsbry, Man. Conch. 11: 360, pl. 39, fig. 33.

TYPE LOCALITY. Tuamotu Archipelago.

Type specimen. Two syntypes of *C. marmoreus* (Pease) are in the Academy of Natural Sciences, Philadelphia, No. 40614, dimensions of illustrated syntype length 5.8 mm, width 3.9 mm. The syntype has *c.* 7½ whorls, 6 spiral grooves on the penultimate, 6 on the body whorl and 11 on the base, and the umbilicus is almost closed except for a narrow chink. Spiral grooves are stained with reddish-brown and snow-white and chevron-shaped axials connect groove-lines (Fig. 1).



Figs. 1-3. *Cantharidus marmoreus* (Pease). 1. Syntype ANSP No. 40614; 5.8 mm. 2, 3. Specimen from Mururoa Atoll, Tuamotus; 5.7 mm.

The species has not been reported this century and is not listed by Salvat & Rives (1975). Recently several specimens have been collected on Mururoa Atoll, Tuamotu Archipelago (*leg.* C. Beslu — Figs. 2, 3).

Family CORALLIOPHILIDAE

Genus *Coralliophila* H. & A. Adams, 1853

Coralliophila H. & A. Adams, 1853, Gen. Rec. Moll. 1: 135. Type species by SD (Iredale, 1912) "*Murex neritoideus* Chemnitz" = *Purpura violacea* Kiener, 1836. Recent, Indo-Pacific.

Coralliophila porphyroleuca (Crosse, 1870)

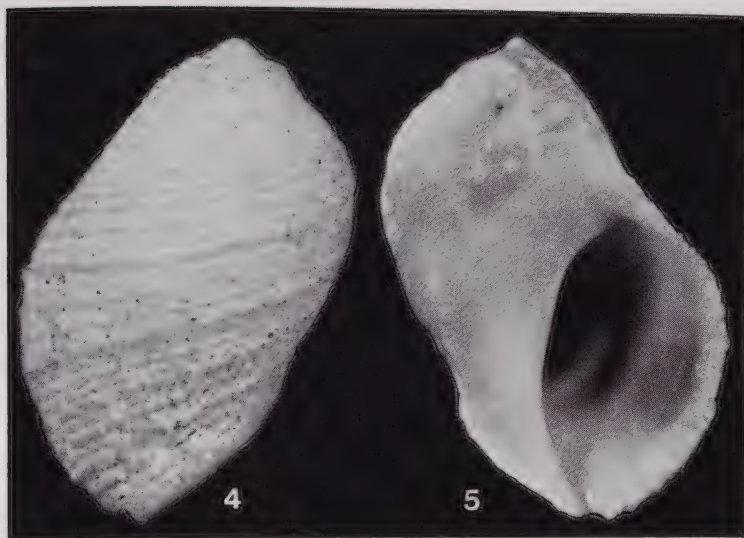
(Figs. 4, 5)

1870. *Purpura porphyroleuca* Crosse, J. Conchyl. 18: 302; 1871 Crosse, J. Conchyl. 19: 322, pl. 13, fig. 7.

1880. *Coralliophila porphyroleuca* Crosse, Tryon, Man. Conch. 2:207, pl. 66, figs. 369, 370.

TYPE LOCALITY. Tahiti, Society Is.

The species has not been reported since the time of description but recently several specimens have been collected at Anaa I, Tuamotu Archipelago (*leg.* J. Troendle — Fig. 4) and a large individual was found by this author on Moorea I (Fig. 5). The species is white to cream in colour and stained with rosy-mauve within the aperture and the sculpture consists of coarse, close-set and lamellose spiral cords.



Figs. 4, 5. *Coralliophila porphyroleuca* (Crosse). 4. Anaa I, Tuamotus; 14.7 mm. 5. Ilot Trioa, Moorea I; 26.8 mm.

Family FASCIOLARIIDAE

Subfamily PERISTERNIINAE Tryon, 1881

Genus *Peristernia* Moersch, 1852

Peristernia Moersch, 1852, Cat. Conchyl. Comes de Yoldi 1: 99. Type species by SD (Melvill, 1891) *Turbinella nassatula* Lamarck, 1822. Recent, Indo-Pacific.

Peristernia lirata (Pease, 1868)

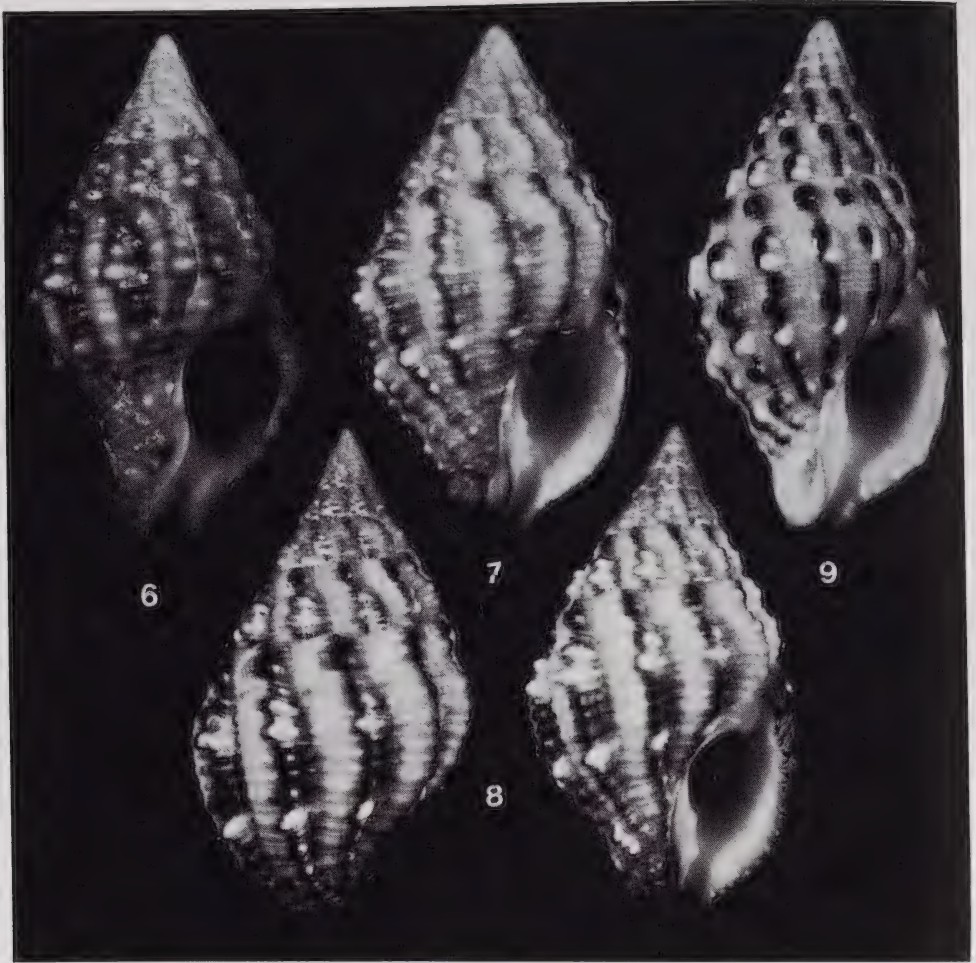
(Figs. 6-8, 10-12)

1847. *Turbinella gemmata* Reeve, Conch. Icon. 4: pl. 12, figs. 61 a, b (publ. August, 1847) [*non T. gemmata* Reeve, 1847, pl. 2, fig. 5 — publ. July 1847].
1868. *Latirus liratus* Pease, Americ. J. Conch. 4 (3): 152 (ref. to *Turbinella gemmata* Reeve var. pl. 12, fig. 61).
1881. *Peristernia lirata* (Pease), Tryon, Man. Conch. 3: 82, pl. 65, fig. 71; 1975 Salvat & Rives, Coquill. Polynesie p. 323, fig. 240.

TYPE LOCALITY. Marquesas Is.

Type specimens. One remaining juvenile syntype of *Latirus liratus* Pease, is in the Academy of Natural Sciences, Philadelphia, No. 35019 (ex-Pease), length 15.4 mm, width 7.0 mm (Fig. 6). There were originally 2 specimens mounted on the tablet but the other specimen is now missing. The 3 probable syntypes of *Turbinella gemmata* var. Reeve, are in the British Museum (Nat. Hist.) No. 197931, and the syntype which appears to have been illustrated by Reeve (1847, pl. 12, figs. 61 a, b) measures 23.3 x 11.7 mm (Fig. 7).

The radular ribbon of *P. lirata* is 7.1 mm long, *c.* 35% of shell-length, and contains 256 rows + 12 nascentes of teeth. The rachidians are trigonal in outline and tricuspid and the laterals are very broad and multicuspid with a variable arrangement of cusps (Fig. 10). The radula features confirm the species placement in *Peristernia*.



Figs. 6-9. 6-8. *Peristernia lirata* (Pease). 6. Juvenile syntype ANSP No. 35019; 15.4 mm. 7. Probable adult syntype BMNH No. 197931; 23.3 mm. 8. Specimen from Marquesas Is; 21.7 mm. 9. *Peristernia gemmata* (Reeve). Anaa I, Tuamotus; 23.6 mm.

The species is closely similar to *P. gemmata* (Reeve, 1847) which also occurs in Polynesia, and both have the axial ribs lined with blackish-brown and occasional nodules white. The spiral sculpture in *P. gemmata* is considerably finer and consists of finely impressed spiral grooves (Fig. 9) whereas in *P. lirata* prominent spiral cords override the axial ribs.

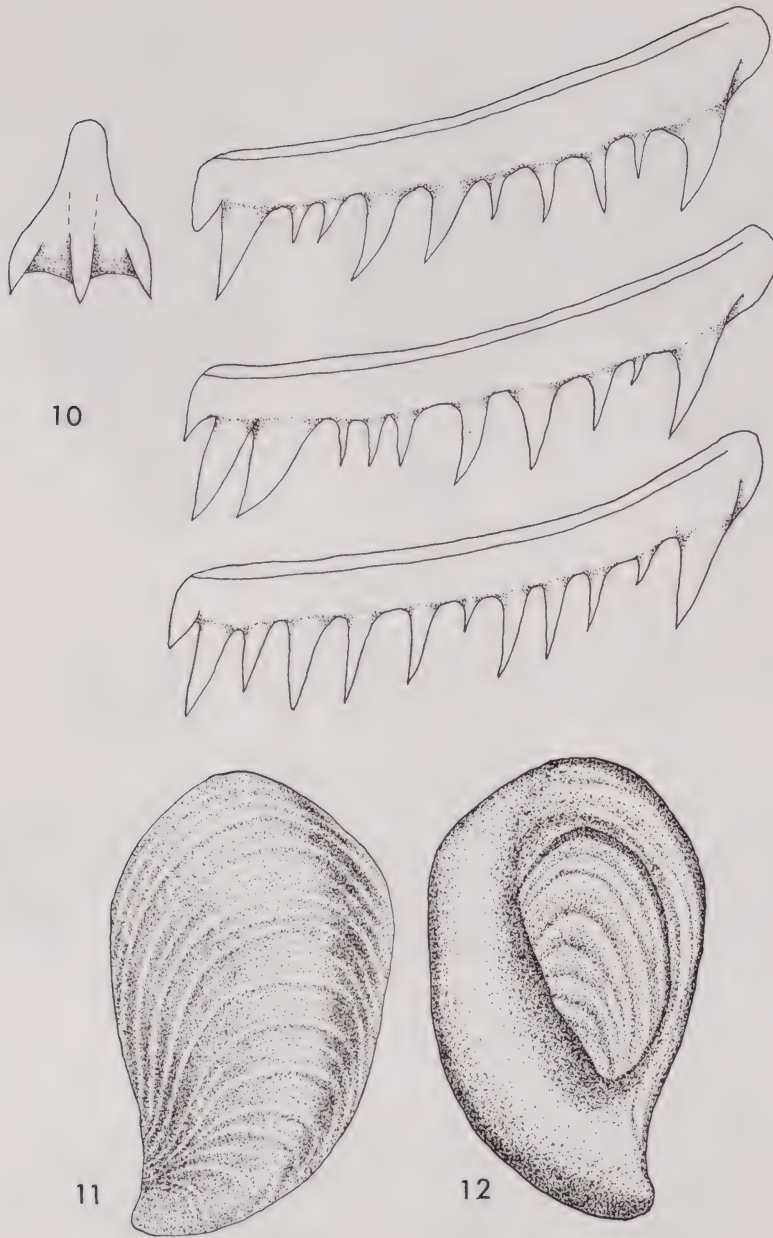
***Peristernia sowerbyi* (Melvill, 1907)**

(Figs. 13, 14)

1907. *Latirus (Peristernia) sowerbyi* Melvill, Proc. Malac. Soc. Lond. 7: 217, textfigs.

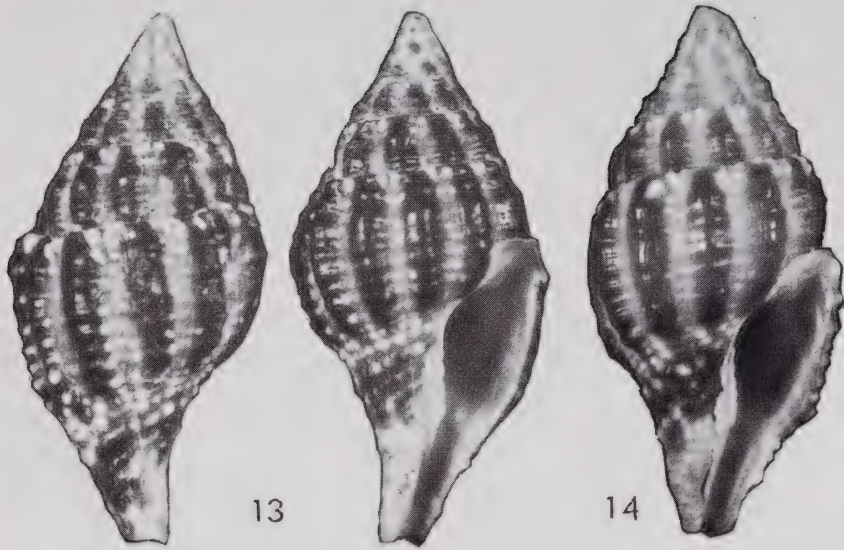
TYPE LOCALITY. Galapagos Isles (= error).

Type specimen. The holotype of *P. sowerbyi* (Melvill) is in the British Museum (Nat. Hist.) No. 1907.2.6.1., dimensions 17.2 x 8.2 mm. There are 10 axial ribs on the penultimate and 11 on the body whorl, sutures have white crenulations, columella with 4 denticles, aperture lirate. Base colour is orange, axial ribs dark reddish-brown, some nodules white, aperture bluish-white (Fig. 13).



Figs. 10-12. *Peristernia lirata* (Pease). Anaa I, Tuamotus. 10. Half-row of radula and 2 lateral teeth, showing variation in denticle pattern. 11, 12. Operculum; 5.1 mm. 11. Front. 12. Obverse attachment side.

The species has not been listed in faunal lists or books dealing with either the fauna of West America or Polynesia. Recently collected specimens from Anaa I, Tuamotu Archipelago (*leg.* J. Troendle — Fig. 14) show the tentative type locality of Galapagos Is to be an error and the species appears to be endemic to French Polynesia.



Figs. 13, 14. *Peristernia sowerbyi* (Melvill). 13. Holotype BMNH No. 1907.2.6.1.; 17.2 mm. 14. Specimen from Anaa I, Tuamotus; 19.2+ mm.

Family NASSARIIDAE

(A decision on the validity of the family-group name is pending by the ICZN, No. Z.N.(S.) 1887).

Genus *Nassarius* Duméril, 1806

Nassarius Duméril, 1806, Zool. analyt. p. 166. Type species by SM (Froriep, 1806) *Buccinum arcularia* Linnaeus, 1758. Recent, Indo-Pacific.

Nassarius troendleorum sp. n.

(Figs. 15-17, 25)

Shell moderately small, up to 25.0 mm in length, ovate and solid, width 55%-63% of length, sutures distinct, teleoconch of 5½-6½ almost flat-sided whorls, protoconch of 2¾-3 smooth, embryonic whorls, juvenile specimens with a faint keel on protoconch whorls, keel absent in adults. Sculpture consists of prominent, round nodules which are arranged in 13-17 axial rows and 3-5 spiral rows on the penultimate and in 12-15 axial rows and 9-10 spiral rows on the body whorl; the sutural row of nodules on the body whorl is smaller than the second anterior row which is usually most prominent. Interspaces of nodules are sculptured with finely impressed spiral grooves which number from 3-6 on the penultimate and from 8-15 on the body whorl. Ventral side of body whorl with a large, broad callus which is thinned above the parietal wall revealing the nodulose sculpture but is thickened posteriorly and sometimes reaches the posterior suture of the penultimate whorl; aperture with 11-13 distinct lirae within and with 5 sharp denticles on the anterior edge of the outer lip, columella with 0-4 weak basal denticles, siphonal notch prominent. White in colour, dorsum of body whorl stained with rusty-brown, denticles on outer lip, tip of siphonal canal and edge of siphonal notch blackish-brown, aperture porcellaneous-white.

TYPE LOCALITY. Punaauia, Tahiti, French Polynesia.

Distribution. From the Kingsmill group, Gilbert Is to the Tuamotu Archipelago.

Holotype. In AIM No. TM-1365, length 24.5 mm, width 14.8 mm (Fig. 15).

Paratypes. No. 1 from Moorea I in coll. B. Busson (Fig. 16); No. 2 from Anaa I, Tuamotu Archipelago in coll. J. Troendle; No. 3 from Anaa I in the Muséum National d'Histoire Naturelle, Paris; No. 's 4-8 from Anaa I in AIM; No. 's 9-11 from the Kingsmill group, Gilbert Is in the British Museum (Nat. Hist.), London (23.6 mm, 22.4 mm and 18.4 mm) [Fig. 17].

I have seen the first 3 specimens of *N. troendleorum* in the British Museum (Nat. Hist.), and the tablet on which the specimens were mounted bore the inscription "*Nassa serratina* or *N. serrifera* Pease — Kingsmill Ids.". Pease probably intended to describe the species but the description has never been published and remained a manuscript name.



Figs. 15-17. *Nassarius troendleorum* sp. n. 15. Holotype AIM No. TM-1365 from Punaauia, Tahiti; 24.5 mm. 16. Lateral view of paratype No. 1 from Moorea I; 21.9 mm. 17. Paratype No. 11 BMNH from Kingsmill group, Gilbert Is; 18.4 mm.

The species is superficially similar to *N. granifer* (Kiener), but this species has a very large, solid callus which reaches the upper spire whorls, the nodules are larger, fewer and differently arranged and the sharp denticles on the anterior of the outer lip and distinct blackish-brown colouring on the base of the body whorl are absent in *N. granifer*.

The new species is named for Jean and Hildrun Troendle, Tahiti, who collected the specimens and also in recognition of their diligent collecting which has resulted in numerous new molluscan records from French Polynesia.

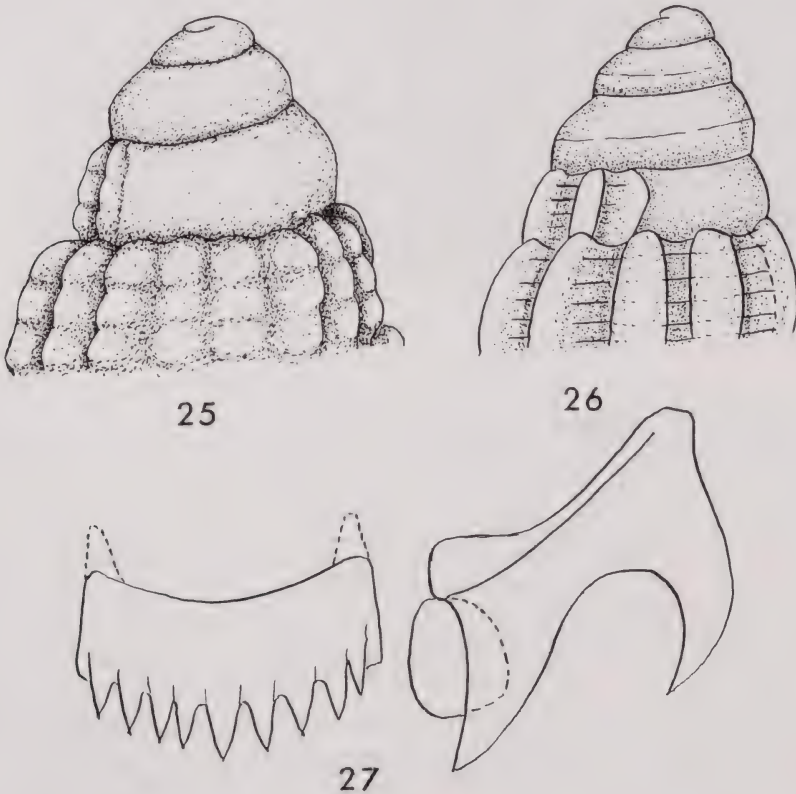


Figs. 18-24. 18-23. *Nassarius rehderi* sp. n. Baié de Matavai, Tahiti. 18, 19. Holotype AIM No. TM-1366; 7.8 mm. 20, 21. Paratype, pale colour form; 7.0 mm. 22, 23. Paratype with wide-spaced axial ribs; 5.6 mm. 24. *N. fraudulentus* (Marrat). Mataiea, Tahiti; 7.5 mm.

Nassarius rehderi sp. n.

(Figs. 18-23, 26-27)

Shell very small, 5.4-7.8 mm in length, ovate and solid, width 49%-59% of length, sutures distinct, teleoconch of $3\frac{3}{4}$ - $4\frac{1}{4}$ convex whorls, protoconch of $3\frac{1}{2}$ -4 glassy, golden coloured and usually brown-banded embryonic whorls, last two whorls of protoconch with an extremely fine spiral keel. Sculptured with thick axial ribs which are frequently wide spaced on spire whorls, penultimate whorl with 7-12 ribs, body whorl with 9-12 ribs; spiral sculpture consists of crisp, overriding spiral threads which are most prominent at posterior half of whorls and number from 8-12 on the penultimate and from 13-23 on the body whorl. Outer lip with a broad, thick varix dorsally and with 8-12 small, lirated denticles on the interior, columella with 2-4 distinct folds basally, anal canal moderately distinct, ventral side of body whorl with a thin, highly glazed callus which does not reach past the body whorl suture and extends usually over 3 axial ribs in width, siphonal canal short and straight, siphonal notch very prominent. Variable in colour, usually brown with white axial ribs and varix, centre of body whorl with a white zone which contains an interrupted spiral band of spots, band occasionally bordered by fine brown lines, some individuals creamy-white and with only the central band of spots; aperture porcellaneous-white, anterior tip of outer lip with a purple-brown blotch which extends onto the back of the varix. Operculum brown, corneous, margins either minutely serrate or simple.



Figs. 25-27. 25, 26. Protoconchs. 25. *Nassarius troendleorum* sp. n. 26. *N. rehderi* sp. n.
27. Half-row of radula of *N. rehderi* sp. n.

Radula typically nassariine, minute, rachidians with 9 denticles, laterals bicuspid, small oval accessory plate partially covered by lateral tooth (Fig. 27).

TYPE LOCALITY. Baié de Matavai, N.E. Tahiti, French Polynesia 1-12 m.

Distribution. Known only from Baié de Matavai and Hitiaa, Tahiti.

Holotype. In AIM No. TM-1366, length 7.8 mm, width 4.1 mm (Figs. 18, 19).

Paratypes. A total of 37 paratypes have been examined. These have been distributed to the Australian Museum, Sydney, The Museum National d'Histoire Naturelle, Paris, the British Museum (Natural History), London, the National Museum of Natural History, Smithsonian Institution, Washington, the Academy of Sciences, Philadelphia, coll. J. Troendle and coll. G. Lindner.

The species does not closely resemble any known *Nassarius* species and can be compared only with *N. fraudulentus* (Marrat, 1877). The latter has more slender and considerably more numerous axial ribs, fewer embryonic whorls (2¼-2½), a row of sutural nodules, finely impressed short spiral grooves rather than threads and the callus-pad is large and thick and the purple-brown spot on the base of the outer lip is also lacking (Fig. 24).

The new species is named for Dr Harald A. Rehder, Zoologist Emeritus, Smithsonian Institution, National Museum of Natural History, Washington, for his research over many years on Polynesian molluscs.

Family COSTELLARIIDAE

Genus **Vexillum** Roeding, 1798

Subgenus **Pusia** Swainson, 1840

Pusia Swainson, 1840, Treat. Malac. p. 320. Type species by *M.P. microzonis* (Lamarck) = *Mitra microzonias* Lamarck, 1811. Recent, Indo-Pacific.

Vexillum (Pusia) mediomaculatum (Sowerby, 1870) (Figs. 28-32)

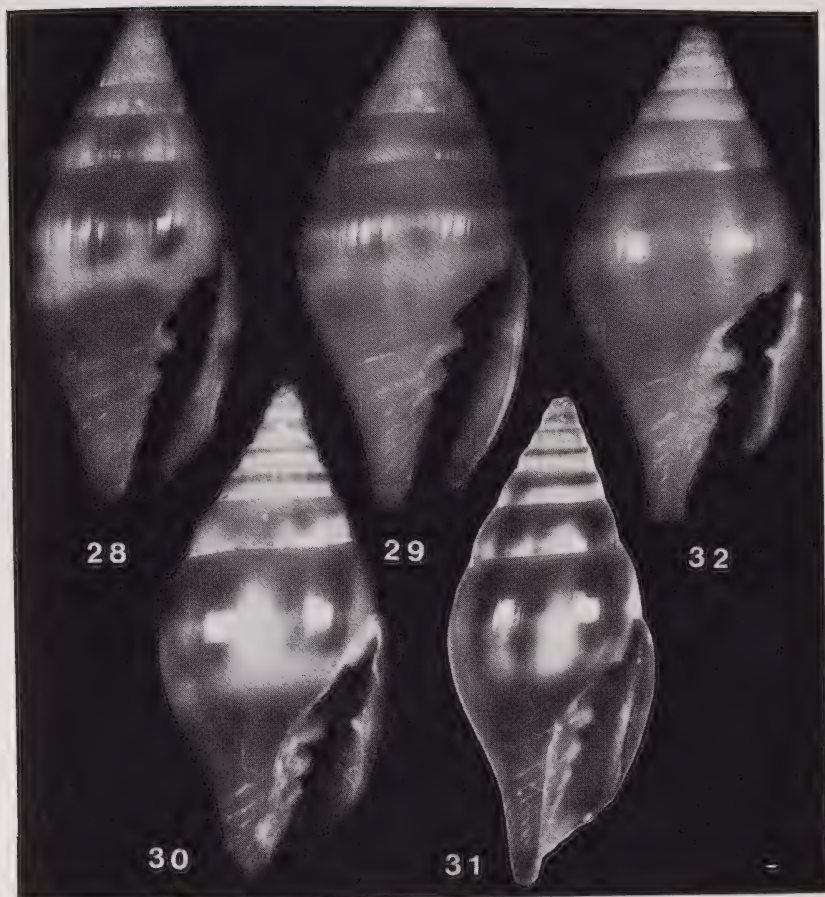
1870. *Mitra mediomaculata* Sowerby, Proc. Zool. Soc. Lond. p. 255; 1874 Sowerby, Thes. Conchyl. 4: 23, pl. 22, fig. 472.

1874. *Mitra (Pusia) cernica* G. & H. Nevill, J. Asiat. Soc. Bengal 43 (1): 24, pl. 1, fig. 9.

1882. *Turricula (Pusia) mediomaculata* Sowerby, Tryon, Man. Conch. 4: 184, pl. 55, figs. 581, 582.

TYPE LOCALITY. Mauritius (*mediomaculatum* and *cernica*).

Type specimens. Three syntypes of *V. (P.) mediomaculatum* are in the British Museum (Nat. Hist.) No. 1875.4.19.6., dimensions of illustrated syntypes 12.0 x 5.2 x 6.9 mm (Fig. 28) and 13.2 x 6.2 x 7.6 mm (Fig. 29 — immature). Axial ribbing is very variable, ribs become obsolete to absent on the body whorl or even completely absent on the last two whorls. Spire whorls are white and ornamented with brown blotches, body whorl brown with a central, broad or narrow, dilacerated white band which occasionally contains additional squarish spots. In the majority of specimens, the third or fourth apertural lira anterior to the start of the aperture forms a distinct denticle.



Figs. 28-32. *Vexillum (Pusia) mediomaculatum* (Sowerby). 28, 29. Syntypes BMNH No. 1875.4.19.6.; 12.0 mm and 13.2 mm respectively. 30, 31. Specimens from Mururoa Atoll, Tuamotus. 30. Broad form; 11.0 + mm. 31. Slender form; 11.9 + mm. 32. Sand I, Oahu, Hawaiian Is; 12.9 mm.

The species appears to be extremely rare and previous records were known only from Mauritius and Madagascar. The recent collection of specimens from Mururoa Atoll, Tuamotu Archipelago (*leg.* C. Beslu) [Figs. 30, 31] and from Sand I, Oahu, and Nawiliwili, Kauai, Hawaiian Is (*leg.* Dr W.R. Haas) [Fig. 32], considerably extends the species distributional range.

Family TURRIDAE

Genus *Turridrupa* Hedley, 1922

Turridrupa Hedley, 1922, Rec. Austral. Mus. 13 (6): 226. Type species by OD *Pleurotoma acutigemmata* E.A. Smith, 1877. Recent, Indo-Pacific.

Turridrupa jubata (Reeve, 1843)

(Fig. 33)

1843. *Pleurotoma jubata* "Hinds", Reeve, Conch. Icon. 1: pl. 7, spec. 52 (publ. March 1843);
 1843 Hinds, Proc. Zool. Soc. Lond. Pt. 11: 37 (publ. October 1843); 1844 Hinds, Voy.
 H.M.S. "Sulphur" 2: 15, pl. 5, fig. 3.

1967. *Turridrupa jubata* (Hinds), Powell, Indo-Pacific Moll. 1 (7): 423, pl. 301, fig. 3.

TYPE LOCALITY. Straits of Malacca, Indonesia, 18 fathoms (33 m).

The species has been previously reported only as far east as New Caledonia and the collection of the species at Mururoa Atoll, Tuamotu Archipelago (*leg.* C. Beslu — Fig. 33) and in Faaa and Faaone, Tahiti (*leg.* J. Troendle) represents a considerable eastward range extension.

The authorship of *T. jubata* has usually been credited to Hinds, but Reeve's publication (1843-1846) has 6 months priority. The other Indo-Pacific species requiring a change in authorship is *Clavatula felina* Hinds, 1843 = *Philbertia (Kermia) felina* (Reeve, 1843).



Figs. 33, 34. 33. *Turridrupa jubata* (Reeve). Mururoa Atoll, Tuamotus; 15.6 mm. 34. *Viriola samoana* Cernohorsky. Faaone, Tahiti; 6.1 mm.

Family TRIPHORIDAE

Genus *Viriola* Jousseaume, 1884

Viriola Jousseaume, 1884, Bull. Soc. malac. France 1: 234, 238. Type species by OD *V. bayani* Jousseaume, 1884. Recent, Indo-Pacific.

Viriola samoana Cernohorsky, 1977 (Fig. 34)

1977. *Viriola samoana* Cernohorsky, Rec. Auckland Inst. Mus. 14: 130, figs. 21-26.

TYPE LOCALITY. Apolima Strait, W. of Upolu I, Western Samoa.

Several specimens of *V. samoana* have been collected at Faaone, Tahiti, and Ilot Trioa, N.W. Moorea I, Society Is (*leg.* J. Troendle). This is the first record of the species outside western Samoa.

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